



GOVERNMENT OF ASSAM

REPORT ON THE CROP ESTIMATION SURVEYS ON PRINCIPAL
FOOD AND NON-FOOD CROPS IN ASSAM

1972-73



DEPARTMENT OF ECONOMICS AND STATISTICS
GOVERNMENT OF ASSAM
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REPORT ON CROP ESTIMATION SURVEYS ON PRINCIPAL FOOD AND NON-FOOD CROPS IN ASSAM, 1972-73.

1. Introduction.

1.1 This report embodies the results of the crop estimation surveys conducted during 1972-73 in Assam. The object of the surveys was to estimate the average yield and total outturn of the principal food and non-food crops by adopting the random sampling technique. As in the previous year, the crops covered by the surveys were Autumn Paddy, Winter paddy, Jute, Rape & Mustard, Sugarcane, Potato and Matikalai.

2. Coverage.

2.1 Due to the creation of two new districts viz. Dibrugarh and Lakhimpur out of the old Lakhimpur district during the second part of the year 1972, crop estimation surveys on Winter paddy, Rape and Mustard, Sugarcane and Potato were conducted in these two districts for obtaining separate estimates at district level. Survey on Autumn paddy was, however, conducted during the year considering these two newly created districts as one, as at the time of conducting survey on this crop, these two districts were not formed. During the year, Mikir Hills and N.C.Hills districts were considered as one district for the purpose of conducting crop estimation surveys. Thus the coverage of the survey on Autumn paddy remained same as in 1971-72 and surveys on Winter paddy, Rape and Mustard and Sugarcane were conducted in all the districts of the State. While survey on Potato was conducted in the eight plains districts only, survey on Matikalai was restricted as usual, to the five districts, viz. Goalpara, Kamrup, Darrang, Nowgong and Sibsagar. The survey on Jute was, however, confined to only four jute growing districts viz. Goalpara, Kamrup, Darrang and Nowgong. The table below will indicate the number of districts and total area under each crop in the State during 1972-73 as per final forecast and the number of districts, and area covered by crop estimation surveys along with the percentage of area covered to total area under each crop during 1972-73.

Crop	Total area as per final forecast 1972-73		Area covered by crop estimation surveys, 1972-73		Percentage of area covered by crop estimation surveys to total area as per final forecast 1972-73
	Number of districts	Area in hectares	Number of districts	Area in hectares	
(1)	(2)	(3)	(4)	(5)	(6)
1. Autumn paddy	8	538500	8	538500	100.00
2. Winter paddy	9	1485200	9	1485200	100.00
3. Jute	8	148960	4	136900	91.99
4. Rape and Mustard	9	157750	9	157750	100.00
5. Sugarcane	9	1310690	9	1310690	100.00
6. Potato	9	27390	8	26700	97.48
7. Matikalai	9	49650	5	44250	89.12

3. Design.

3.1 The statistical design adopted for all these surveys was one of the stratified multistage random sampling with Revenue Circles or Sub-divisions as strata. In respect of Autumn paddy, Winter paddy, Rape and Mustard and Potato surveys, revenue circles were considered as strata, while for Jute, Sugarcane and Matikalai surveys, Sub-divisions were taken as strata in all the plains districts. In Mikir and N. C. Hills, due to non prevalence of land record system, both the districts combined was considered as one stratum for all crops.

3.2 For the purpose of crop estimation surveys within each stratum two experiments per village were conducted for each crop and the required number of villages for conducting the quota of experiments allotted in each stratum were selected at random. In addition to these villages a few other villages were also selected at random in each stratum as additional villages for facilitating substitution if needed. During the year under report a common set of villages was selected in each stratum for conducting the crop estimation surveys on each crop throughout the year.

3.3 In each selected village, two fields growing the crops were selected at random and in each selected field a plot of size $5\text{m} \times 5\text{m}$ ($\frac{1}{400}$ th of a hectare) was randomly located for conducting crop

cutting experiments except for Potato, where the plot size consisted of seven consecutive rows each measuring 5m in length. Thus in conducting crop estimation surveys, villages within a stratum were considered as first stage units, fields growing the crops under survey in a selected village were taken as second stage units and the experimental plots of specific size in a selected field were considered as the ultimate stage units. Selection of fields, location and marking of experimental plots, harvesting, threshing, winnowing, cleaning weighing etc. of the produce, were the different stages of operation of the experiments in the field.

3.4 The central drriage experiments in respect of Autumn paddy, Winter paddy, Rape and Mustard and Mavikalai were conducted in the statistical offices at Districts/Sub—divisions under the supervision of the Statistical Officers in order to arrive at an estimate of reduction in weight due to drriage of the freshly harvested grains. These experiments were limited to some selected villages only. The number of experiments planned and accepted for analysis for central drriage experiments in the different districts are shown in Table. 11.1.

3.5. In respect of Jute, supplementary operations like retting, extraction of fibres, drying of fibres, recording of final weights etc. were carried out only in fifty percent of the selected villages. In the case of Sugarcane, for arriving at an estimate of ratio of cane to gur, subsequent operations like extraction of juice, preparation of gur, recording of weight of gur prepared etc. were conducted in a limited number of experiments. The results of drriage experiments conducted for all the crops in the State are presented in Table 11.2.

4. Organisation:

4.1. All the works of the crop estimation surveys were conducted under the administrative and technical control of the Director of Statistics, Assam in consultation with the Director, Field Operations, National Sample Survey Organisation, Government of India. The technical staff of the Agriculture, Section of the Department of Economics and Statistics, Assam assisted the Director of Statistics in carrying out all the technical works connected to these surveys viz. Planning of the survey, selection of villages, training to the field staff, technical instructions, analysis of the report etc.

4.2 The field works of the surveys were conducted by the Field Assistants of the Department of Economics and Statistics, Assam posted in the different districts and sub-divisions under the control and supervision of the respective Statistical Officers. The lists of selected villages for all the surveys were supplied from the Headquarters once in the year and the sample allocation statements were supplied at the time of each survey to all the Statistical Officers concerned well in advance and the Statistical Officers, in their turn, allotted the villages to the Field Assistants for carrying out the surveys.

5. Training:

5.1. A programme of training is essential for increasing the efficiency of the field staff just before the starting of different crop estimation surveys every year. Before starting the field works in respect of each crop, the Statistical Officers at the districts and sub—divisions imparted necessary training and instructions to the field staff under them. Besides, the annual refresher training course was proposed to be organised in three centres, i. e. (1) Gauhati for the supervisory and field staff of Goalpara, Kamrup and Darrang districts. (2) Nowgong, for the supervisory and field staff of Nowgong, Cachar and Mikir and N. C. Hills districts and (3) Dibrugarh, for Sibsagar, Dibrugarh and Lakhimpur districts. Necessary training was imparted at Gauhati centre from 23rd October to 24th October 1972 except to the staff of Tezpur Sub—division under this centre. In the other two centres viz. Nowgong and Dibrugarh, centralised training could not be given due to some unavoidable circumstances. So, the Statistical Officers of Tezpur, Nowgong, Sibsagar, Dibrugarh, Lakhimpur, Cachar and Mikir and N. C. Hills imparted necessary training to their field staff and other supervisory staff at their respective offices. At the time of the training programmes, out of the total strength of 48 Field Assistants, 45 field Assistants were in position. Of these 45 Field Assistants 40 Field Assistants were imparted training in the technique of conducting crop estimation surveys. The remaining 5 Field Assistants were on leave at the time of training and they were imparted necessary training later on. Against the three posts vacant, two Primary Investigators with proper training were engaged in conducting crop estimation surveys each in Gauhati and Tezpur Sub—divisions. The other Post remained vacant throughout the year in Nowgong district. The details of attendance in the training programmes are given in Table 15.1.

6. Sample allocation.

6.1 The allocation of experiments among the districts and among the strata were made mainly on area proportion basis. Other factors like number of field workers in each district/ sub-division, the total work load of field workers, budgetary provisions etc. were also considered in allocating the experiments. Districtwise allocation of experiments under each crop along with the number of state and total area under each crop during 1972-73 and the number of strata and percentage of area covered by crop estimation surveys in each district are shown in Table 1.1 to 1.7.

7. Equipments:

7.1 Almost all the equipments required for field experimentation such as tape, balance, standard weights strings, kit box etc. were supplied by the respective Statistical Officers except pegs and Pessian cloth as bamboo pegs and bamboo mats are easily available in the villages of Assam. The details of the equipments provided to the field staff are given in Table 14.1.

8. Work load.

8.1 Out of the 2930 experiments planned during 1972-73 for conducting crop estimation surveys on different crops in the State, 1510 experiments were assigned for Kharif season i.e. for Autumn paddy, Winter paddy, and Jute and 1420 experiments were assigned for Rabi season i.e. for Rape and Mustard, Sugarcane, Potato and Matikalai. During the Kharif season all the 49 field staff had to conduct more than 8 experiments. In the Rabi season, out of 49 Field Assistants, 47 had to conduct more than 8 experiments and only 2 Field Assistants in Mikir and N. C. Hills had to conduct 5 to 8 experiments. During the year, combining both the season all the 49 Field Assistants had to conduct more than 16 experiments for all crops. During Kharif season 20.8 experiments in average were assigned to each Field Assistant while in Rabi season each Field Assistant had to conduct 29.0 experiments in average. During the year under report 59.8 experiments in average were conducted by one Field Assistant. The details of work load of field staff are shown in Table 13.1.

9. Response.

9.1 The overall response in conducting the crop estimation surveys during the year under report was found to be satisfactory. The response for each individual crop in the State was above 95 percent. The overall responses in all the districts for all crops were above 90 percent. Cent percent response was achieved in Sibsagar, Dibrugarh and Mikir and N.C. Hills for all crops. Except for Jute (95.8 P.C.) in Darrang, Matikalai (91.4 P.C.) in Goalpara, cent percent response was achieved for other crops in these two districts. The overall response in the State for all crops was 98.3 percent. The districtwise details of number of experiments planned, conducted successfully and percentage response are given in Table 2.1. During the year under report out of 2930 experiments planned, surveys on 2880 experiments only were conducted, the number of experiments lost being 50. The details of the experiments lost are presented in Table 12.1.

10. Supervision.

10.1 The supervision over the work of the Field Assistants in the field was mainly carried out by the Statistical Officers at Sub-divisions/Districts and their supervisory staff. For ensuring better quality of field work as well as for comparability of results of supervision with the general one and also for judging the accuracy of the overall estimates, programme of fixed supervision at all stages under the pre-assigned supervision programme was arranged in a sub-sample of about 25 percent of the sample villages selected at random in respect of Autumn paddy, Winter paddy and Jute. The names of the villages selected for such supervision were not divulged to the field Assistants and the supervisions were made surprising without the knowledge of the Field Assistants and as a result the Field Assistants had to give equal care in conducting the surveys in all the sample villages. In total 308 experiments (20.4 P. C. of the total experiments) could be supervised under this programme for the above three crops out of 386 experiments planned for the purpose. In additions to these village, supervision was also carried out in respect of other villages for these three crops.

10.2. For the crops not covered by the programme of fixed supervision, the harvest stage supervision was fixed at 20 percent of the total experiments planned in the State. In respect of these crops viz. Rape and Mustard, Sugarcane, Potato, and Matikalai, Harvest-stage supervision was carried out on 280 experiments i.e. on 19.7 percent of the total experiments planned. The overall supervision at harvest stage was carried out on 669 experiments i.e. on 22.8 percent of the total experiments planned (23.2 percent of the total experiments conducted). The details of supervision at harvest stage are shown in Table 10.1

10.3. In addition to harvest stage supervision, some experiments were supervised at pre-harvest and post harvest stages also. During the year under report, 151 experiments were supervised at pre-harvest stage and 121 experiment were supervised at post harvest stage in all the districts/sub-divisions. The total (exclusive) experiments supervised for all crops irrespective of stage of supervision were 761 which constituted 26.0 percent of the total experiments planned (26.4 percent of the total experiments conducted) during the year.

The particulars of the experiments supervised at different stages are presented in Table 10.2 of the report. All the central diriage experiments carries out in the offices of the Statistical Officers at districts sub-divisions were supervised by the supervisory staff of the respective district/sub-division. These experiments have not been included in Table 10.2.

10.4. The supervisory staff of the National Sample Survey Organisation (Agricultural Statistics section) Government of India, posted at Shillong, conducted independent supervision of the field works of the primary staff of this department in course of the different crop estimation surveys conducted during the year.

The number of experiments supervised by the supervisory staff of NSSO at different stages for the different crops are shown below —

Crops	Pre harvest	Harvest	Post harvest	Diriage	Total	Total exclusive
1. Autumn paddy	...	...	...	...	...	...
2. Winter paddy	21	21	3	...	45	45
3. Jute	...	...	...	...	...	...
4. Rape & Mustard	...	...	2	...	2	2
5. Sugarcane	...	2	...	...	2	2
6. Potato	...	...	...	...	...	...
7. Matikalai	4	2	...	...	6	6
Total	25	25	5	...	55	55

From above it is seen that the supervisory staff of the National Sample Survey Organisation supervised in total 55 experiments (exclusive) or 1.88 percent of the total experiments planned of which 25 experiments were supervised at harvest stage constituting 0.85 percent of the total experiments planned. As against 145 experiments supervised during Kharif crops in the previous year, the N. S. S. O. could carry out supervision of 45 experiments out of 225 experiments planned for paddy. The percentage at harvest stage supervision of Kharif crop worked out barely to 1.39 of the 1510 experiments planned for the State. In Rabi season only 10 experiments could be supervised as against 64 experiments in the previous years. This indicates very poor performance of supervision work as also lack of proper association with the S. B. staff during the year.

During the year in total 724 experiments (24.70 percent of the total experiments planned) were supervised at harvest stage by the supervisory staff of both the departments. The supervisory staff of these two departments supervised 816 total (exclusive) experiments or 27.85 percent of the total number of experiments planned during the year.

10.5. It was revealed from the supervision reports of the State and National Sample Survey Organisation that the quality of field work was good in general and no serious mistake was observed in carrying out the crop cutting experiments.

10.6. Estimates of average yields based on experiments supervised under pre-assigned programme of supervision and on all experiments supervised at harvest stage by the supervisory officers of the department separately along with average yield based on all experiments for the different crops have been presented in Table 9.1 to 9.7 of the report.

11. Procedure of calculation of Average yield of different crops.

11.1 Paddy—In case of paddy, the plot yields were recorded in the returns in terms of grains immediately after threshing. These plot yields were converted to dry and clean rice in kilogram per hectare. The results of the driage experiments revealed that the average moisture content in the grains was 11.27 percent for Autumn paddy and 8.27 percent for Winter paddy for the entire State. The dry paddy was then converted to rice by taking the official conversion factor (62.5%) for recovery of rice from paddy.

The stratum average yields were obtained as simple arithmetic mean of the results of all the experiments in the stratum whereas the district average yields were obtained as the weighted average of the stratum average yields, weights being actual area under the crop in the respective stratum during the year 1971-72. In the case of Mikir and N. C. Hills the district as a whole was considered as stratum. The average yield for the entire region covered by the survey was obtained as the weighted average of the district average yields, weights being the area under the crop as per final forecast, 1972-73.

11.2. Jute—The average weight of the 'green' harvest for each stratum was measured as the simple arithmetic mean of the weights of the produce of the experiments in the stratum. The district and pooled average yields of "green" harvest were obtained as weighted average, weights being the actual area under jute in the different sub-divisions during 1971-72 and district areas as per final forecast 1972-73 respectively.

From the results of the subsequent operations conducted in a sub-sample of 50 percent of the selected villages, estimates of ratio of dry fibres to "green" weight were performed for individual district. The district estimates of average yields of dry fibres were worked out from the average yields of "green" weight and average percentage ratio of dry to "green" yield, assuming them to be independent variables. The average percentage ratio of dry to "green" yields for the entire region covered under the survey was worked out at 4.88 percent.

11.3. Rape and Mustard—The plot yields recorded in the returns were obtained in terms of freshly harvested grains. Before further analysis, the plot yields were corrected for reduction of moisture after driage. The central driage experiments showed an average moisture content of 8.37 percent for the State as a whole.

The procedure adopted for estimating the average yields at different levels was same as in the case of paddy.

11.4. Potato—The stratum average yields were obtained as simple arithmetic mean of the results of all the experiments in the stratum whereas the district and pooled average yields were obtained as the weighted average yields, weights being the actual area in the respective stratum during 1971-72 in the first case and district areas as per final forecast 1972-73 in the second.

11.5. Sugarcane—The stratum average yields and the pooled estimates for the districts and the State were obtained in the same procedure as adopted in the case of potato. The supplementary operations were carried out in 36 experiments out of 40 experiments planned for obtaining the ratio of gur to cane and these ratios were used for estimating production in terms of gur. The results of the experiments showed that the ratio of gur to cane was 10.28 percent.

11.6. Matikalai—The plot yields recorded in the returns were obtained in terms of freshly harvested grains. Before working out further statistical analysis the yields were converted to dry grains. The results of the central driage experiments showed that the average moisture content in the harvested grains was 5.65 percent for all the districts taken together. The district estimates of average yields were measured as the weighted averages of the stratum average, weights being the actual areas under the crop in the respective strata during 1971-72. Similarly, the pooled estimate was in terms of weighted average of the district averages, weights being the district area as per final forecast, 1972-73.

11.7 The districtwise estimates of average yields of different crops and the corresponding pooled estimates for the region covered by the surveys are shown in the Table below.

Average yield in K'ogram/hectare

District	Autumn rice	Winter rice	Potato	Rape & Mustard	Sugar cane in terms of cane	Jute	Matikalai
1	2	3	4	5	6	7	8
1. Goalpara	710	994	5118	321	31529	1368	615
2. Kamrup	623	1079	5238	222	35096	1126	377
3. Darrang	896	1308	4660	453	38219	1370	627
4. Nowgong	525	1212	3775	316	50563	1501	588
5. Sibsagar	814	1128	4538	489	40167	...	619
6. Dibrugarh	*680	1225	5218	707	46480	...	...
7. Lakhimpur		1365	4205	722	34828	...	...
8. Cachar	1500	929	3672	271	31988	...	...
9. Mikir & N.C Hills	1049	1446	...	721	31920	...	...
Pooled	781	1155	4790	412	38235	1353	522

* Combined figures for Dibrugarh and Lakhimpur Districts

11.8 Detailed districtwise estimates of average yields with their sampling errors for the different crops during 1972-73 are presented in Tables 3.1 to 3.7 of the report.

12. Estimates of Production.

12.1 For all other crops except rice production in each district was estimated by multiplying the area under the crop by the average yield per unit of area. In the case of rice the area is first corrected for bund and production was estimated by multiplying the area corrected for bund by the average yield of rice per unit of area. The bund factor for Autumn paddy and Winter paddy during 1972-73 were 1.36 percent and 1.51 percent respectively. The pooled production of a crop for the entire region covered under each survey was nothing but the summation of the productions in the individual districts. The estimates of production of different crops are shown in the Table 4.1. to 4.7

12.2 Area production and average yields of different crops in the districts for the last five years are presented in Tables 5.1 to 5.7.

13. Analysis of Variance.

13.1 The variation between plot yields was analysed into two component variations viz. variation between villages and variation between fields within villages which are given by the corresponding mean squares. The mean square between fields within villages is an estimate of the corresponding true variance while the mean square between villages does not provide an estimate of the corresponding variance. Mean square between villages is a function of the two estimated mean squares, the number of villages and the number of fields in the sample. This mean square between villages can easily be computed.

13.2 The number of villages required with varying number of fields for estimating the average yield at different level of precision that is with different percentage sampling errors are presented in Tables 8.1 to 8.7. The result of analysis of variance of plot yields are shown in Tables 7.1 to 7.7.

14. Frequency Distribution.

14.1 The results of frequency distribution of plot yields in respect of the different crop estimation surveys are presented in Tables 6.1 to 6.7. From the results the following may be said against each crop:

14.2 Autumn rice:-- Out of 501 experiments conducted for this crop, 26.55 p.c. recorded yields less than 500 kilograms per hectare, 59.67 percent between 500 kilogram to less than 1200 kilograms per hectare and 13.78 percent above 1200 kilograms per hectare. Only 3.79 percent of the experiments recorded yield less than 100 kilograms per hectare and 5.79 percent more than 1800 kilograms per hectare. The mean yield for this crop was 804 kilogram per hectare.

14.3 Winter rice :- In respect of Winter paddy, out of 694 experiments conducted 6.49 percent recorded yield less than 500 kilograms per hectare, and 44.22 percent above 1200 kilograms per hectare. None of the experiments conducted recorded yield less than 100 kg. per hectare. Yield more than 1800 kilograms per hectare was recorded for 7.78 percent of the experiments conducted. The mean yield for the crop was worked out as 454 kilograms per hectare.

14.4 Jute :- Of the 298 experiments conducted for Jute during the year 33 experiments (11.07 percent) recorded yield less than 40 kilograms per plot and 48 experiments (16.11 percent) recorded yield more than 100 kilogram per plot. The mean yield for jute was estimated at 73 kilograms per plot.

14.5 Rape & Mustard :- Out of 384 experiments conducted 70.84 percent recorded yield less than 500 kilogram per hectare, the mean yield being 415 kg. per hectare.

14.6 Sugarcane :- In the case of sugarcane 63.12 percent of the 290 experiments conducted had shown yield less than 100 kilograms per plot. The mean yield in this case was 93 kg. per plot.

14.7 Potato :- The mean yield in respect of Potato was worked out as 4545 kg. per hectare. Out of 426 experiments conducted for this crop 281 experiments (65.96 p.c.) recorded yield less than 5000 kg. per hectare.

14.8 Matikali :- Out of 287 experiments conducted for Matikali, 191 experiments (66.55 p.c.) recorded yield less than 600 kg. per hectare. The mean yield for this crop was estimated at 521 kg. per hectare.

15. Weather and Crop Condition

15.1 Autumn Paddy :- The weather condition for the crop was favourable in almost all the districts except Cachar, Nowgong and Lakhimpur districts. In these districts drought condition prevailed at pre-sowing stage while as a result of excessive rainfall flood damaged the crops at harvesting stage. The area under the crop increased from 5,19,950 hectares in 1971-72 to 5,38,500 hectares in 1972-73 recording an increase of 3.6 percent. The pooled average yield of the crop was found to be higher than the previous year. The production of the crop was estimated at 4,14,635 tonnes during 1972-73 as against the production of 3,19,953 tonnes during 1971-72 showing an increase of 29.6 percent.

15.2 Winter Paddy :- The weather condition for Winter paddy was more or less favourable in almost all the districts except in Cachar where drought condition prevailed from sowing to harvesting stage. In Sibsagar district heavy flood at the sowing stage damaged the crop considerably. Owing to the above factors the area under the crop decreased in Cachar and Sibsagar districts in comparison to the areas in the previous year. The total area under the crop was estimated at 14,85,200 hectares, during 1972-73 as against 14,16,350 hectares in 1971-72 recording an increase of 4.9 percent. The average yields of the crop in Kamrup, Darrang and Nowgong districts were found to be higher than the previous year. The pooled average yield was also slightly higher than that of the previous year. The estimated total production was 16,89,401 tonnes during 1972-73 as against 15,41,445 tonnes during 1971-72 reflecting a rise by 9.6 percent.

15.3 Jute :- Weather condition for the crop was unfavourable during the year under review. Drought condition prevailed upto sowing stage in Nowgong district. On the other hand, heavy rainfall from sowing to harvesting stage caused flood in all other districts damaging the crop. The total estimated area was 1,34,370 hectares during 1972-73 as against 1,42,600 hectares during 1971-72 recording 5.8 percent decrease during 1972-73. The decrease in area was accountable for excessive rainfall. The production of jute during 1972-73 was estimated at 10,10,076 bales of 180 kg. each as against the production of 11,38,274 bales during 1971-72 recording a decrease of 11.27 percent during the year. The average yield rates obviously decreased considerably in all the districts.

15.4 Potato :- The weather condition for the crop was more or less favourable in all the districts. The total estimated area under potato increased to 27,390 hectares during 1972-73 from 25,760 hectares during 1971-72 recording a rise by 6.3 percent over the previous year. Barring slight damage by drought condition and insect pests in some districts, no report of substantial damage

was received during the year under review. There had been slight decrease in the average yield in comparison to the previous year. The production of potato was estimated at 1,31,205 tonnes during 1972-73 as against 1,30,517 tonnes during 1971-72 recording a marginal rise by 0.5 percent over the previous year.

15.5 Rape & Mustard :- The weather condition for the crop was unfavourable in some districts. Drought condition affected the crop which prevailed from sowing to the harvesting stage in some districts especially in lower Assam districts. In Upper Assam districts the weather condition was favourable all throughout the season right from pre-sowing to harvesting stage. Despite unfavourable weather condition the area under the crop increased from 1,35,550 hectares during 1971-72 to 1,57,750 hectares during 1972-73 recording an increase of 16.4 percent over 1971-72. With the exception of Sibsagar and Lakhimpur districts, the average yield declined in all the districts due to drought condition and weed infestation. The estimated production during the year recorded a nominal increase by 1,420 tonnes or 2.2 percent from 63,571 tonnes during 1971-72 to 64,991 tonnes during 1972-73.

15.6 Sugarcane :- The weather condition for this crop was favourable in all the districts throughout the year. The area under sugarcane was estimated at 34,280 hectares during 1972-73 as against 33,780 hectares during 1971-72. The average yield increased slightly in comparison to that of last year. The production of sugarcane was estimated at 13,10,690 tonnes during 1972-73 as against 12,74,044 tonnes during 1971-72 recording an increase of 2.9 percent. The production of gur during 1972-73 was 1,34,739 tonnes as against 1,13,392 tonnes during 1971-72 reflecting a rise by 18.8 percent. The ratio of cane to gur was found to be 10.28 percent during 1972-73 as against 8.90 percent during 1971-72.

15.7 Matikalai :- The weather condition for the crop was more or less favourable during the year. Factors like excessive rainfall in Kamrup district and drought condition in Darrang district during sowing stage were responsible for the decrease of area under the crop from the last year's area. Favourable weather condition after sowing stage in general was reflected in the increased average yields than those of the previous year. The area under the crop was estimated at 49,650 hectares during 1972-73 as against 50,950 hectares during 1971-72. For reasons stated above the production of the crop, recorded an increase of 10,405 tonnes (67.1 percent) from 15,502 tonnes in 1971-72 to 25,907 tonnes in 1972-73.

TABLE 1.1

Sample allocation statement—Autumn paddy, 1972-73

District	Total No. of primary workers	Total No. of Strata	No. of Strata covered	Total cropped area in 000 hect.	P. C of area covered	No. of experiments allotted	Remarks	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
1. Goalpara	...	7	16	15	141	91.8	80	Revenue circles were considered as strata in the plains districts.
2. Kamrup	...	9	15	13	169	99.9	102	
3. Darrang	...	7	6	6	67	100.0	66	
4. Nowgong	...	5	8	7	44	97.9	56	Crop estimation survey on Autumn paddy was conducted in Dibrugarh and Lakhimpur districts considering them as one district.
5. Sibsagar	...	6	10	8	16	96.1	46	
6. Dibrugarh	|	5	8	8	27	100.0	66	
7. Lakhimpur								
8. Cachar	...	4	7	6	49	97.9	56	Mikir Hills and N. C. Hills were considered as one stratum.
8. Mikir Hills and N.C. Hills	...	4	1	1	26	100.0	38	
Total	...	47	71	64	539	97.3	510	

TABLE 1-2

District		Sample allocation statement—Winter paddy 1972-73					Remarks.
		Total No. of primary workers	Total No. of strata	No. of Strata covered	Total cropped area in 000 hect.	P. C. of area covered	
(1)		(2)	(3)	(4)	(5)	(6)	(7)
7. Goalpara	...	7	16	14	202	93.4	94
2. Kamrup	...	9	15	14	277	98.3	114
3. Darrang	...	7	6	6	180	100.0	82
4. Nowgong	...	5	8	8	173	100.0	72
5. Sibsagar	...	6	10	10	215	100.0	86
5. Dibrugarh	...	3	5	5	123	100.0	70
7. Lakhimpur	...	4	5	5	98	100.0	66
8. Cachar	...	4	7	7	136	100.0	72
9. Mikir Hills and N. C. Hills.	...	4	1	1	81	100.0	44
Total		49	73	70	1485	98.7	700

Revenue circles were considered as strata in plains districts.

Mikir Hills and N. C. Hills were considered as one stratum.

TABLE 1-3

District		Sample allocation statement—June, 1972-73					Remarks
		Total No. of primary workers	Total No. of strata	No. of strata covered	Total cropped area in 000 hect.	P. C. of area covered	
(1)		(2)	(3)	(4)	(5)	(6)	(7)
1. Goalpara	...	7	3	3	35	100.0	84
2. Kamrup	...	9	3	3	29	100.0	84
3. Darrang	...	7	2	2	21	100.0	48
4. Nowgong	...	5	1	1	38	100.0	84
Total		28	9	9	123	100.0	300

Subdivisions were considered as strata.

TABLE 1-4

District		Sample allocation statement—Rape and Mustard, 1972-73					Remarks
		Total No. of primary workers	Total No. of strata	No. of strata covered	Total cropped area in 000 hect.	P. C. of area covered	
(1)		(2)	(3)	(4)	(5)	(6)	(7)
1. Goalpara	...	7	16	12	25	91.1	60
2. Kamrup	...	9	15	13	35	98.8	74
3. Darrang	...	7	6	6	27	100.0	60
4. Nowgong	...	5	8	8	26	100.0	54
5. Sibsagar	...	6	10	6	13	96.7	38
6. Dibrugarh	...	3	5	5	8	100.0	30
7. Lakhimpur	...	4	5	4	17	94.7	34
8. Cachar	...	4	7	4	1	82.0	20
9. Mikir Hills and N. C. Hills.	...	4	1	1	6	100.0	20
Total		49	73	69	158	95.8	590

Revenue circles were considered as strata in the plains districts.

Mikir Hills and N. C. Hills were considered as one stratum.

TABLE 1.5
Sample allocation statement—Sugarcane, 1972-73

District	Total No. of primary workers	Total No. of strata	No. of strata covered	Total cropped area in 000 hect.	P. C. of area covered	No. of experiments allotted	Remarks
(1)	[2]	[3]	[4]	[5]	[6]	[7]	[8]
1. Goalpara ...	7	3	3	1	100.0	30	
2. Kamrup ...	9	3	3	5	100.0	42	Subdivisions were considered as strata in plains districts.
3. Darrang ...	7	2	2	4	100.0	24	
4. Nowgong ...	5	1	1	3	100.0	32	
5. Sibsagar ...	6	3	3	9	100.0	62	
6. Dibrugarh ...	3	1	1	3	100.0	30	
7. Lakhimpur ...	4	2	2	1	100.0	24	
8. Cachar ...	4	3	3	4	100.0	36	
9. Mikir and N. C. Hills.	4	1	1	4	100.0	20	Mikir Hills and N. C. Hills were considered as one stratum
Total ...	49	19	19	34	100.0	300	

TABLE 1.6
Sample allocation statement—Potato 1972-73

District	Total No. of primary workers	Total No. of strata	No. of strata covered	Total cropped area in 000 hect.	P. C. of area covered	No. of experiments allotted	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Goalpara ...	7	16	15	7	98.2	86	
2. Kamrup ...	9	15	13	8	96.9	88	Revenue circles were considered as strata in plains districts.
3. Darrang ...	7	6	6	4	100.0	64	
4. Nowgong ...	5	8	6	2	92.8	32	
5. Sibsagar ...	6	10	8	1	97.7	34	
6. Dibrugarh ...	3	5	5	1	100.0	36	
7. Lakhimpur ...	4	5	5	2	100.0	48	
8. Cachar ...	4	7	6	2	99.9	42	
Total ...	45	72	64	27	98.0	430	

TABLE 1.7
Sample allocation statement—Matikailai 1972-73

District	Total No. of primary workers	Total No. of strata	No. of strata covered	Total cropped area in 000 hect.	P. C. of area covered	No. of experiments allotted	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Goalpara ...	7	3	3	11	100.0	70	
2. Kamrup ...	9	3	3	17	100.0	88	Subdivisions were considered as strata.
3. Darrang ...	7	2	2	4	100.0	52	
4. Nowgong ...	5	1	1	9	100.0	50	
5. Sibsagar ...	6	3	3	3	100.0	40	
Total ...	34	12	12	44	100.0	300	

TABLE—2·1

Number of Experiments, planned, conducted successfully and percentge response.

TABLE—

Number of Experiments, planned, conducted successfully

District		Autumn Paddy		P R	Winter Paddy		P R	Jute		P R	Rape and Mustard		
		P	C		P	C		P	C		P	C	P R
1		2	3	4	5	6	7	8	9	10	11	12	13
1. Goalpara	...	80	80	100·0	94	94	100·0	84	84	100·0	60	60	100·0
2. Kamrup	...	102	102	100·0	114	114	100·0	84	84	100·0	74	72	97·3
3. Darrang	...	66	66	100·0	82	82	100·0	48	46	95·8	60	60	100·0
4. Nowgong	...	56	55	98·2	72	72	100·0	84	84	100·0	54	54	100·0
5. Sibsagar	...	46	46	100·0	86	86	100·0	...	...	...	38	38	100·0
6. Dibrugarh	...	30*	30*	100·0*	70	70	100·0	...	...	...	30	30	100·0
7. Lakhimpur	...	36	31	86·1	66	61	92·4	...	...	...	34	34	100·0
8. Cachar	...	56	53	94·6	72	71	98·6	...	...	...	20	16	80·0
<hr/>													
P plains total	...	472	463	97·9	656	650	99·1	30	298	99·3	370	364	98·4
<hr/>													
9. Mikir & N.C. Hills	...	38	38	100·0	44	44	100·0	...	...	...	20	20	100·0
<hr/>													
Hills total	...	98	98	100·0	44	44	100·0	...	...	...	20	20	100·0
<hr/>													
State total	...	510	501	98·2	700	694	99·1	300	298	99·3	390	384	98·5

* Crop estimation survey on Autumn paddy was conducted in Dibrugarh and Lakhimpur

P=Planned C=Conducted PR=Percentage Response

2. 1.

and percentage response.

Sugar cane			Potato			Maukalai			Total		
P	C	P R	P	C	P R	P	C	P R	P	C	P R
14	15	16	17	18	19	20	21	22	23	24	25
30	30	100.0	86	86	100.0	70	64	91.4	504	498	98.8
42	40	95.2	88	88	100.0	80	83	94.3	592	583	98.5
24	24	100.0	64	64	100.0	52	52	100.0	396	394	99.5
32	32	100.0	32	32	100.0	50	48	96.0	380	377	99.2
62	62	100.0	34	34	100.0	40	40	100.0	306	306	100.0
30	30	100.0	36	36	100.0	...	...	...	196	196	100.0
24	16	66.7	48	44	91.7	...	...	...	208	186	89.4
36	36	100.0	42	42	100.0	...	...	...	226	218	96.5
280	270	96.4	430	426	99.1	300	287	95.7	2808	2758	98.2
20	20	100.0	...	...	...	...	...	...	122	122	100.0
20	20	100.0	...	...	...	...	...	...	122	122	100.0
300	290	96.7	430	426	99.1	300	287	95.7	2930	2880	98.3

Districts considering them as one district.

TABLE—3·1

Estimates of Average Yield of Autumn Rice with their Sampling Errors.

Districts		Average yield (kg/hect.)	Sampling error (kg/hect.)	Percentage Sampling error	Average yield in terms of Paddy [kg/hect.]
[1]		[2]	[3]	[4]	[5]
1. Goalpara	..	710	29·25	4·12	1136
2. Kamrup	...	623	83·68	13·43	997
3. Darrang	..	896	41·06	4·92	1434
4. Nowgong	..	525	42·08	8·02	840
5. Sibsagar	..	814	71·81	8·82	1302
6. Dibrugar	}	680	69·04	10·15	1038
7. Lakhimpur		..	..	..	..
8. Cachar	..	1500	123·30	8·22	2400
9. Mikir Hills and N. C. Hills	..	1049	78·10	7·45	1678
Pooled	..	781	30·77	3·91	1249

TABLE - 3. 2.

Estimates of Average yield of Winter Rice with their Sampling Errors

District		Average yield [kg/hect.]	Sampling error [kg/hect.]	Percentage sampling error	Average yield [in terms of Paddy] [kg/hect.]
[1]		[2]	[3]	[4]	[5]
1. Goalpara	..	994	28·89	2·91	1590
2. Kamrup	..	1079	44·72	4·14	1726
3. Darrang	..	1308	41·73	3·19	2093
4. Nowgong	..	1212	63·15	5·21	1939
5. Sibsagar	..	1128	59·91	5·31	1805
6. Dibrugarh	..	1225	49·15	4·01	1960
7. Lakhimpur	..	1365	58·23	4·27	2184
8. Cachar	..	929	32·00	3·44	1486
9. Mikir Hills and N. C. Hills	..	1446	24·95	1·73	2314
Pooled	..	1155	16·78	1·45	1848

TABLE 3.3
Estimates of Average yield of Jute (Dry fibre) with their Sampling Errors

District	Average yield[kg/hect]	Sampling error[kg/hect.]	Percentage Sampling error
[1]	[2]	[3]	[4]
1. Goalpara	1368	82	5.99
2. Kamrup	1126	53	4.73
3. Darrang	1370	135	9.89
4. Nowgong	1501	75	5.01
Pooled	1353	44	3.22

TABLE 3.4
Estimates of average yield of Rape and Mustard with their Sampling Errors.

District	Average yield[kg/hect.]	Sampling error [kg/hect.]	Percentage Sampling error.
[1]	[2]	[3]	[4]
1. Goalpara	321	32.36	10.08
2. Kamrup	222	12.41	5.59
3. Darrang	453	41.51	9.16
4. Nowgong	316	21.82	6.91
5. Sibsagar	489	93.35	19.09
6. Dibrugarh	707	47.80	6.76
7. Lakhimpur	722	44.26	6.13
8. Cachar	271	41.37	15.27
9. Mikir and N.C Hills	721	126.89	17.74
Pooled	412	14.39	3.49

TABLE 3.5.
Estimates of Average yield of Sugarcane with their Sampling Errors.

District	Average yield in terms of cane [kg/hect.]	Sampling error [kg/hect.]	Percentage Sampling error	Average yield in terms of Gur [kg/hect.]
(1)	(2)	(3)	(4)	(5)
1. Goalpara	31529	65.91	20.90	3241
2. Kamrup	35096	23.64	6.74	3608
3. Darrang	38219	115.40	30.19	3929
3. Nowgong	50563	59.00	11.67	5198
5. Sibsagar	40167	14.66	3.65	4129
6. Dibrugarh	46480	27.71	5.96	4778
7. Lakhimpur	34828	61.44	17.63	3580
8. Cachar	31988	15.07	4.71	3288
9. Mikir Hills & N.C. Hills	31920	26.28	8.23	3281
Pooled	38235	13.96	3.65	3930

TABLE 3.6.
Estimates of Average yield of Potato with their Sampling Errors.

Districts	Average yield [kg/hect]	Sampling error [kg/hect]	Percentage Sampling Error
(1)	(2)	(3)	(4)
1. Goalpara	5118	240.06	4.69
2. Kamrup	5238	707.54	13.51
3. Darrang	4660	285.71	6.13
4. Nowgong	3775	370.82	9.82
5. Sibsagar	4538	367.19	8.09
6. Dibrugarh	5218	659.05	12.63
7. Lakhimpur	4205	409.81	9.75
8. Cachar	3672	252.76	6.88
Pooled	4790	222.46	5.40

TABLE 3.7

Estimates of Average yield of Matikailai with their Sampling Errors.

Districts	Average yield [kg/hect]	Sampling error [kg/hect]	Percentage Sampling error.
[1]	[2]	[3]	[4]
1. Goalpara	615	30.19	4.91
2. Kamrup	377	29.07	7.71
3. Darrang	627	33.88	5.40
4. Nowgong	588	84.63	14.39
5. Sibsagar	619	60.28	9.74
Pooled	522	23.13	4.43

TABLE 4.1.
Estimates of Production of Autumn Rice

Districts	Area as per final forecast 1972-73 [In hectare]	Area corrected for bunds 1.36%.	Production in tonnes.
[1]	[2]	[3]	[4]
1. Goalpara	141000	139082	98748
2. Kamrup	169000	166702	103855
3. Darrang	66800	65892	59039
4. Nowgong	43700	43106	22631
5. Sibsagar	16000	15782	12847
6. Dibrugarh	12000	11837	8049
7. Lakhimpur	15000	14796	10061
8. Cachar	49000	48334	72501
9. Mikir Hills	14000	13810	14487
10 N C. Hills	12000	11837	12417
Pooled	538500	531178	414635
State	538500	531178	414635

TABLE 4.2

Estimates of Production of Winter Rice

District	Area as per final forecast 1972-73 [in hectare]	Area corrected for bunds 1.51%	Production in tonnes.
(1)	(2)	(3)	(4)
1. Goalpara	202300	199245	198050
2. Kamrup	277000	272817	294370
3. Darrang	180500	177774	232528
4. Nowgong	173000	170388	206509
5. Sibsagar	215000	211753	238857
6. Dibrugarh	122500	120560	147686
7. Lakhimpur	98000	96520	131750
8. Cachar	1,36000	133946	124436
9. Mikir Hills	75000	73867	106812
10. N.C. Hills	5900	5811	8403
Pooled	1485200	1462681	1689401
State	1485200	1462681	1689401

TABLE 4.3

Estimates of Production of Jute.

District	Area as per final forecast 1972-73 [in hectare]	Production in bales of 180 kg. each	Production in tonnes.
(1)	(2)	(3)	(4)
1. Goalpara	35000	266000	4788
2. Kamrup	28600	178909	32204
3. Darrang	20850	158692	28565
4. Nowgong	38000	316878	57038
Pooled	122450	920479	122595
State	134370	1010076	245190

TABLE 4.4

Estimates of Production of Rape and Mustard.

Districts		Area as per final forecast 1972-73 [in hectares]		Production in tonnes.	
1		2		3	
1. Goalpara	...	25000	...	...	8025
2. Kamrup	...	35000	...	...	7770
3. Darrang	...	27000	...	...	12231
4. Nowgong	...	26000	...	...	8216
5. Sibsagar	...	13000	...	...	6357
6. Dibrugarh	...	8000	...	...	5656
7. Lakhimpur	...	17000	...	...	12274
8. Cachar	...	900	...	...	244
9. Mikir Hills	...	5300	...	...	3821
10. N. C. Hills	...	550	...	...	397
Pooled	...	157750	...	...	64991
State	...	157750	...	...	64991

TABLE 4.5.

Estimates of Production of Sugarcane.

Districts	Area as per final forecast 1972-73 in hectare	Production in terms of cane [in tonnes]	Production in terms of gur [in tonnes]		
1	2	3	4		
1. Goalpara	...	1200	37835	...	3889
2. Kamrup	...	5300	186009	...	19122
3. Darrang	...	3500	133767	...	13751
4. Nowgong	...	3400	171914	...	17673
5. Sibsagar	...	9000	361503	...	37163
6. Dibrugarh	...	2500	116200	...	11045
7. Lakhimpur	...	1300	45276	...	4654
8. Cachar	...	4000	127952	...	13153
9. Mikir Hills	...	4000	127680	...	13125
10. N. C. Hills	...	80	2554	...	263
Pooled	...	34280	1310690	...	134739
State	...	34280	1310690	...	134739

TABLE 4.6.

Estimates of Production of Po'a'o.

District		Area as per final forecast 1972-73 [in hect.]		Production in tonnes	
1		2		3	
1. Goalpara	...	6900	...	...	35314
2. Kamrup	...	7700	...	...	40333
3. Darrang	...	4100	...	...	19106
4. Nowgong	...	1600	...	...	6040
5. Sibsagar	...	1000	...	...	4538
6. Dibrugarh	...	1300	...	...	6783
7. Lakhimpur	...	2000	...	...	8410
8. Cachar	...	2400	...	...	8813
Pooled	...	27000	...	...	129337
State	...	27390	...	...	131205

TABLE 4.7

Estimates of Production of Matikalai

District		Area as per final forecast 1972-73 [in hectre]		Production in tonnes.	
1		2		3	
1. Goalpara	...	11350	...	...	6980
2. Kamrup	...	16500	...	...	6221
3. Darrang	...	3700	...	...	2320
4. Nowgong	...	9500	...	...	5586
5. Sibsagar	...	3200	...	...	1981
Pooled	...	44250	...	...	23088
State	...	49650	...	...	25907

TABLE

STATEMENT SHOWING THE AREA, PRODUCTION AND YIELD RATE OVER FIVE YEARS OF

District	1968-69				1969-70			
	Area as per final forecast.	Area corrected for bund 1'64%.	Production	A.V. yield	Area as per final forecast	Area corrected for bund 1'62%.	production	A.V. yield
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
1. Goalpara	131523	129366	93661	724	127476	125411	84025	670
2. Kamrup	174015	171161	113651	664	172801	170002	11351	655
3. Darrang	61715	60703	53054	874	61715	60715	47904	789
4. Nowgong	46134	45377	35848	790	44515	43794	23123	528
6. Sibsagar	20234	19902	12081	607	21353	21499	15630	727
6. Dibrugarh*	—	—	—	—	—	—	—	—
7. Lakhimpur	33346	32799	34078	1039	33346	32806	31199	951
8. Cachar	38445	37815	23105	611	38445	37822	39562	1046
9. Mikir & N. C. Hills	17806	17514	21455	1225	20234	19908	19647	987
10. Garo Hills	37595	36978	26254	710	37595	36986	26445	715
Pooled	560813	551615	413187	749	557980	548941	398886	727
State	560813	551615	413187	749	557980	548941	398886	727

*figures of Lakhimpur and Dibrugarh

Table

Statement Showing the Area, production and Yield rate over Five Years of

District	1968-69				1969-70			
	Area as per final forecast.	Area corrected for bund. 1'6%	Production	Av. yield.	Area as per final forecast	Area corrected for bund 1'50%.	Production.	Av. yield
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
1. Goalpara ...	194249	191141	176041	921	196273	193329	181729	940
2. Kamrup ...	256571	252466	223937	887	257583	253719	194095	765
3. Darrang ...	180490	177602	216852	1221	180895	178182	174618	980
4. Nowgong ...	165517	162869	188928	1160	165921	163432	139898	856
5. Sibsagar ...	224601	221007	280016	1267	222932	219637	241820	1101
6. Dibrugarh *	—	—	—	—	—	—	—	—
7. Lakhimpur ...	178062	175213	231106	1319	192226	189343	231756	1224
8. Cachar ...	157828	155303	193973	1249	149734	147488	132592	899
9. Mikir & N.C. Hills	32375	31857	46129	1448	38445	37868	58392	1542
10. U.K. & J. Hills	36017	35441	53903	1662	37838	37270	52700	1414
11. Garo Hills ...	22258	21902	25866	1181	22258	21924	28107	1282
Pooled ...	1447968	1424801	1641751	1152	1464155	1442192	1435707	996
State ...	1488437	1464622	1687625	1152	1496530	1474081	1467468	996

**From 1968-69 to 1971-72 figures of Lakhimpur

5.1

AUTUMN RICE (AREA IN HECT, PRODUCTION IN TONNES, AVERAGE YIELD IN KG/HECT)

1970-71				1971-72				1972-73			
Area as per final forecast	Area corrected for bund 1.60%	Production	A.V. yield	Area as per final forecast	Area corrected for bund 1.60%	production	A.V. yield	Area as per final forecast	Area corrected for bund 1.35%	Production	A.V. yield
[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]
131520	129416	96674	747	135000	132840	7866	541	141000	139082	98748	710
173600	170822	101981	597	167500	164820	67082	407	169000	166702	103855	623
62320	61323	45747	746	62300	61303	36598	597	66800	65892	59039	896
48000	47232	24561	520	47800	47035	28080	597	43700	43106	22631	525
21850	21500	16684	776	19700	19385	13201	681	16000	15782	12847	814
—	—	—	—	—	—	—	—	—	—	—	—
33390	32856	29702	904	34350	33800	30217	894	27000	26633	18110	680
39000	38376	37378	974	35000	34440	52039	1511	49000	48334	72501	1500
18200	17909	26846	1499	18300	18007	20870	1159	26000	25647	26904	1049
—	—	—	—	—	—	—	—	—	—	—	—
527880	519434	379573	731	519950	511630	319953	625	538500	531178	414635	780
527880	519434	379573	731	519950	511630	319953	625	538500	531178	414635	780

districts are combined.

5.2

Winter Rice (Area in hect, production in tonnes, average yield in kg/hect)

1970-71				1971-72				1972-73			
Area as per final forecast.	Area corrected for bund. 1.54%	Production.	Av. yield.	Area as per final forecast.	Area corrected for bund. 1.51%	Production.	Av. yield	Area as per final forecast.	Area corrected for bund. 1.51%	Production.	Av. yield.
[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]
198300	195246	171231	877	202400	199344	186187	934	202300	199245	198050	994
254850	250925	249169	993	259500	255582	231813	907	277000	272817	294370	1079
179680	176913	211411	1195	178500	175805	190045	1081	180500	177774	222528	1308
160000	157536	170611	1083	150000	147735	139905	947	173000	170388	206509	1212
230000	226458	294395	1300	223000	219633	312098	1421	215000	211753	238857	1128
—	—	—	—	—	—	—	—	122500	120560	147686	1225
198000	194951	221269	1135	208600	205451	240994	1173	98000	96520	131750	1365
151650	149315	187838	1258	150000	147735	186589	1263	136000	133946	124436	929
41900	41255	62501	1515	44350	43680	53814	1232	80900	79678	115215	1446
—	—	—	—	—	—	—	—	—	—	—	—
1414380	1392599	1568425	1126	1416350	1394965	1541445	1105	1485200	1462681	1689401	1155
1446755	1424475	1604317	1126	1416350	1394965	1541445	1105	1485200	1462681	1689401	1155

and Dibrugarh districts are combined.

TABLE 5.3

Statement Showing the Area, Production and Yield rate over Five Years of Jute

(Area in hect., production in bales of 180 kg., average yield in kg/hect.)

		1968-69			1969-70			1970-71			1971-72			1972-73		
District	...	Area	Production	Av. yield.	Area	Production	Av. yield.	Area	Production	Av. yield.	Area	Production	Av. yield.	Area	Production	Av. yield.
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1. Goalpara	...	22258	198838	1608	32375	330585	1838	35000	302944	1558	38400	281173	1318	35000	266000	1368
2. Kamrup	...	25091	154031	1105	30351	292044	1732	29600	181875	1106	35000	252194	1297	28600	178909	1126
3. Darrang	...	15378	125587	1470	16137	149460	1662	20610	123950	1100	20850	206183	1780	20850	158692	1370
4. Nowgong	...	32577	210122	1161	35208	240001	1227	36030	267148	1335	40200	333660	1494	38000	316873	1501
5. Garo Hills	...	6070	41613	1234	6070	49032	1454	—	—	—	—	—	—	—	—	—
Pooled	...	101374	730191	1296	120191	1061122	1589	121230	877917	1304	134450	1073210	1437	122450	920474	1353
State	...	106112	778705	1296	128082	1130782	1589	129335	936779	1304	142600	1138274	1437	134370	1010076	1353

TABLE 5.4.

Statement Showing the Area, Production and Yield rate over Five Years of Rape & Mustard

(Area in hect., production in tonnes, Av. yield in kg/hect.)

District	1968-69			1969-70			1970-71			1971-72			1972-73		
	Area	Production	Av.yield	Area	Production	Av.yield	Area	Production	Av.yield	Area	Production	Av.yield	Area	Production	Av.yield
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Goalpara	28328	9858	348	26710	115212	431	26300	10678	406	25000	11650	466	25000	8025	321
2. Kamrup	28328	6487	229	31970	6330	198	32180	11070	344	33000	12573	381	35000	7770	222
3. Darrang	22258	8747	393	21330	9257	434	23270	10774	463	23900	11520	482	27000	12231	453
4. Nowgong	23472	10750	458	26100	9422	361	21880	6433	294	22100	10409	471	26000	8216	316
5. Sibsagar	13152	4853	369	13400	6526	487	14700	6409	436	13000	6929	533	19000	6357	489
6. Dibrugarh*													8000	5656	707
7. Lakhimpur	10319	4293	416	10120	4048	400	14000	7658	547	14000	7182	513	17000	12274	722
8. Cachar	2023	573	283	1820	511	281	1420	534	376	1000	344	344	900	244	271
9. Mikir and N. C. Hills	2428	1566	645	2750	1873	681	3390	2912	859	3550	2964	835	5850	4218	721
10. Garo Hills	4452	1260	283	4860	2095	431	...	...	...	...	...	...	...	...	...
Pooled	134760	48387	359	139060	51574	371	137140	56468	412	135550	63571	469	157750	64991	412
State	134760	48387	359	139100	51589	371	137140	56468	412	135550	63571	469	157750	64991	412

* From 1968-69 to 1971-72 figures of Lakhimpur and Dibrugarh districts are combined.

TABLE 5.5

Statement Showing the Area, Production and Yield rate over Five Years of Sugarcane

Area in hectares, production in tonnes
(in terms of cane), av-yield in kg/hect.
(in terms of cane)

District	1968-69			1969-70			1970-71			1971-72			1972-73		
	Area	Production	Av-yield	Area	Production	Av-yield	Area	Production	Av-yield	Area	Production	Av-yield	Area	Production	Av-yield
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Goalpara	2630	83710	31829	2630	165203	62815	2430	110589	45510	1800	53888	29938	1200	37835	31529
2. Kamrup	4654	106013	22779	4660	230372	49436	4540	159227	35072	4300	189234	44008	5300	186009	35096
3. Darrang	2630	135416	51489	2730	148064	54234	2670	87453	32754	2800	63090	22532	3500	133767	38219
4. Nowgong	3440	112760	32779	3520	189052	53708	3380	124408	36807	4000	154152	38538	3400	171914	50563
5. Sibsagar	8296	304787	36739	8900	392446	44095	9050	390200	43116	10000	434290	43429	9000	361503	40167
6. Dibrugarh*													2500	116200	46480
7. Lakhimpur	3480	144051	41394	3440	209548	60915	3400	132175	38875	3900	191182	49021	1300	45276	34828
8. Cachar	4168	128370	30799	4460	145079	32529	4250	81311	19132	4500	130176	28928	4000	127952	31988
9. Mikir and N.C. Hills	1942	87285	44946	2510	94225	37540	2510	114135	45472	2480	58032	23400	4080	130234	31920
Pooled	31240	1102392	35288	32850	1573989	47914	32230	1199498	37217	33780	1274044	37716	34280	1310690	38235
State	32009	1129529	35288	39020	1582134	47914	32830	1221828	37217	33780	1274044	37716	34280	1310690	38235

*From 1968-69 to 1971-72 figures of Lakhimpur and Dibrugarh districts are combined.

TABLE 5-6
Statement Showing the Area, Production and Yield rate over Five Years of Potato

(Area in hectares, production in tonnes,
Average yield in kg/hect.)

District (1)	1968-69			1969-70			1970-71			1971-72			1972-73		
	Area (2)	Production (3)	Average yield (4)	Area (5)	Production (6)	Average yield (7)	Area (8)	Production (9)	Average yield (10)	Area (11)	Production (12)	Average yield (13)	Area (14)	Production (15)	Average yield (16)
1. Goalpara	7487	38663	5164	7280	34100	4684	6860	38725	5645	6600	38082	6770	6900	35314	5118
2. Kamrup	4856	30452	6271	5260	18626	3541	5000	23790	4758	6400	32787	5123	7700	40333	5238
3. Darrang	4654	16540	3554	4050	10323	2549	4270	19019	4454	4300	17574	4087	4100	19106	4660
4. Nowgong	2023	6083	3007	1620	3295	2034	1550	3751	2420	1400	4413	3152	1600	6040	3775
5. Sibsagar	1093	6873	6288	1900	5423	2854	1050	5729	5456	1060	4785	4511	1000	4538	4538
6. Dibrugarh*	2237	22138	6839	3280	11641	3549	3250	14248	4384	3100	20429	6590	1300	6783	5218
7. Lakhimpur	2104	6581	3128	2180	7944	3644	2200	4138	1881	2400	9914	4131	2400	8813	3672
8. Cachar	25454	127330	5002	25570	91352	3573	24183	109400	4524	25260	127984	5067	27000	129337	4790
Pooled	28914	144636	5002	29390	105002	3573	24670	111617	4524	25760	130517	5067	27390	131205	4790
State															

*From 1968-69 to 1971-72 figures of Lakhimpur and Dibrugarh districts are combined.

TABLE 5-7
Statement Showing the Area, Production and Yield rate over Five Years of Matikalai

(Area in hectares, production
in tonnes, Average yield in kg/hect.)

District (1)	1968-69			1969-70			1970-71			1971-72			1972-73		
	Area (2)	Production (3)	Average yield (4)	Area (5)	Production (6)	Average yield (7)	Area (8)	Production (9)	Average yield (10)	Area (11)	Production (12)	Average yield (13)	Area (14)	Production (15)	Average yield (16)
1. Goalpara	12790	3300	258	12600	5242	416	10500	3863	368	11150	4371	392	11350	6980	615
2. Kamrup	14390	3108	216	16292	3925	241	11101	4809	249	16400	3247	198	16500	6221	377
3. Darrang	6645	2548	382	6695	2879	430	7840	3646	465	7150	2559	326	3700	2320	627
4. Nowgong	9030	3455	386	9630	4025	418	7100	2911	410	7510	2651	353	9500	5586	588
5. Sibsagar	4700	2280	485	4800	2630	548	2940	1005	342	3050	1156	379	3200	1981	619
Pooled	47535	14721	309	50017	18702	374	44480	23415	347	45960	13984	304	44250	23088	522
State	54061	16731	309	56390	21086	374	49565	17199	347	50950	15502	304	49650	25907	522

TABLE 6.1

Frequency distribution of plot yields—Autumn Rice 1972-73.

Limit in kg/hectare	No. of experiments	Percentage to total
(1)	(2)	(3)
0 to less than 100	19	3.79
100 to less than 200	14	2.80
200 to less than 300	25	4.99
300 to less than 400	28	5.59
400 to less than 500	47	9.38
500 to less than 600	41	8.18
600 to less than 700	39	7.79
700 to less than 800	51	10.18
800 to less than 900	41	8.18
900 to less than 1000	45	8.98
1000 to less than 1100	41	8.18
1100 to less than 1200	41	8.18
1200 to less than 1300	17	3.39
1300 to less than 1400	9	1.80
1400 to less than 1500	4	0.80
1500 to less than 1600	7	1.40
1600 to less than 1700	1	0.20
1700 to less than 1800	2	0.40
1800 to less than Above	29	5.79
Total	501	100.00

Mean yield = 804 kg/hect. Standard deviation = 433 kg/hect. Co-efficient of variation = 53.86%

TABLE 6.2.

Frequency distribution of plot yields — Winter Rice 1972-73

Limit in kg/hect	No. of experiments	Percentage to total
(1)	(2)	(3)
0 to less than 100	0	0
100 to less than 200	4	0.58
200 to less than 300	9	1.30
300 to less than 400	13	1.87
400 to less than 500	19	2.74
500 to less than 600	21	3.03
600 to less than 700	34	4.90
700 to less than 800	44	6.34
800 to less than 900	48	6.92
900 to less than 1000	82	11.82
1000 to less than 1100	43	6.20
1100 to less than 1200	70	10.08
1200 to less than 1300	56	8.06
1300 to less than 1400	54	7.78
1400 to less than 1500	45	6.43
1500 to less than 1600	37	5.33
1600 to less than 1700	37	5.33
1700 to less than 1800	24	3.46
1800 to less than 1900	23	3.31
1900 to less than 2000	7	1.01
2000 and above	24	3.46
Total	694	100.00

Mean yield = 1154 kg/hect Standard deviation = 426 kg/hect
 Co. efficient of variation = 36.92 %

TABLE 6.3

Frequency distribution of plot yields—June 1972-73.

Limit in kg/plot	No. of experiments	Percentage to total
(1)	(2)	(3)
0 to less than 20	9	3.02
20 to less than 40	24	8.05
40 to less than 60	66	22.15
60 to less than 80	88	29.53
80 to less than 100	63	21.14
100 to less than 120	34	11.41
120 to less than 140	10	3.36
140 to less than 160	2	0.67
160 and above	2	0.67
Total	298	100.00

Mean yield = 73 kg/ plot = 1402 kg/hect
 Standard deviation = 29kg/plot = 557 kg/hect.
 Co-efficient of variation = 39.73%

TABLE 6.4

Frequency distribution of plot yields-Rape and Mustard 1972-73.

Limit in kg/hect.	No. of experiments	Percentage to total
(1)	(2)	(3)
0 to less than 100	31	8.07
100 to less than 200	84	21.88
200 to less than 300	54	14.06
300 to less than 400	63	16.41
400 to less than 500	40	10.42
500 to less than 600	18	4.69
600 to less than 700	25	6.51
700 to less than 800	21	5.47
800 to less than 900	11	2.86
900 to less than 1000	8	2.08
1000 to less than 1100	7	1.82
1100 to less than 1200	19	4.95
1200 and above	3	0.78
Total	384	100.00

Mean yield = 415 kg/hect.
 Standard deviation = 303 kg/hect.
 Co-efficient of variation = 73.01%

TABLE 6.5

Frequency distribution of plot yields-Sugarcane 1972-73.

Limit in kg/plot (1)	No. of experiments (2)				Percentage to total. (3)
0 to less than 20	2	...	0.69
20 to less than 40	15	...	5.17
40 to less than 60	40	...	13.80
60 to less than 80	59	...	20.35
80 to less than 100	67	...	23.11
100 to less than 120	36	...	12.42
120 to less than 140	32	...	11.04
140 to less than 160	25	...	8.60
160 and above	14	...	4.82
Total	290				100.00

Mean yield = 93 kg/plot = 37200 kg/hect.
 Standard deviation = 37 kg/plot = 14800 kg/hect.
 Co-efficient of variation 39.78%

TABLE 6.6.

Frequency distribution of plot yields---Potato 1972-73

Limit in kg/hectare (1)	No. of experiments (2)				Percentage to Total (3)
0 to less than 500	0	...	0
500 to less than 1000	2	...	0.47
1000 to less than 1500	11	...	2.58
1500 to less than 2000	14	...	3.29
2000 to less than 2500	30	...	7.04
2500 to less than 3000	45	...	10.56
3000 to less than 3500	59	...	13.85
3500 to less than 4000	47	...	11.03
4000 to less than 4500	40	...	9.39
4500 to less than 5000	33	...	7.75
5000 to less than 5500	24	...	5.63
5500 to less than 6000	25	...	5.88
6000 to less than 6500	17	...	3.98
6500 to less than 7000	16	...	3.76
7000 to less than 7500	13	...	3.05
7500 to less than 8000	8	...	1.88
8000 to less than 8500	11	...	2.58
8500 to less than 9000	4	...	0.94
9000/ and above	27	...	6.34
Total	426				100.00

Mean yield = 4545 kg/hect.
 Standard deviation = 2090 kg/hect.
 Co-efficient of variation = 45.98%

TABLE 6.7

Frequency distribution of plot yields--Maikala 1972-73

Limit in kg/hect	No. of experiments				Percentage to total
(1)	(2)				(3)
0 to less than 100	15	...	5.23
100 to less than 200	34	...	11.85
200 to less than 300	31	...	10.80
300 to less than 400	54	...	18.81
400 to less than 500	31	...	10.80
500 to less than 600	29	...	9.06
600 to less than 700	14	...	4.88
700 to less than 800	17	...	5.92
800 to less than 900	21	...	7.32
900 to less than 1000	10	...	3.48
1000 to less than 1100	10	...	3.48
1100 to less than 1200	8	...	2.79
1200 and above	16	...	5.58
Total	287				100.00

Mean yield=521 kg/hect.

Standard deviation=332 kg/hect

Co-efficient of variation=63.72%

TABLE 7.1

Analysis of Variance -Autumn Rice 1972-73

District	Between districts		Between circles		Between villages		Between fields	
	D.F.	M.S. in 00 [kg/hect.] ²	D. F.	M. S. in 00 [kg/hect.] ²	D.F.	M. S. in 00 [kg/hect.] ²	D. F.	M.S. in 00 [kg/hect.] ²
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Goalpara	14	1545*	25	730*	40	353
2. Kamrup	12	4517**	38	1294**	51	357
3. Darrang	5	15585**	27	841**	33	342
4. Nowgong	6	1947	21	835	27	537
5. Sibsagar	7	14619*	15	3559	23	2399
6. Dibrugarh	7	9819*	23	3853**	30	998
7. Lakhimpur	5	3233	21	7879**	26	2049
8. Cachar	18	2318**	19	246
9. Mikir Hills and N. C. Hills.
Pooled	7	54608**	56	6298**	188	2430**	249	808

*Significant at 5 per cent level.

**Significant at 1 per cent level.

TABLE 7.2

Analysis of Variance—Winter Rice 1972-73

District	Between districts		Between Circles		Between villages		Between fields	
	D.F.	M.S. in 00 [kg/hect.] ²	D.F.	M. S. in 00 [kg/hect.] ²	D.F.	M. S. in 00 [kg/hect.] ²	D.F.	M. S. in 00 [kg/hect.] ²
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Goalpara	13	6976**	33	764	47	606
2. Kamrup	13	11397**	43	2185**	57	621
3. Darrang	5	6938**	35	1506	41	1008
4. Nowgong	7	6809*	28	2734**	36	1086
5. Sibsagar	9	4415*	33	1652*	43	786
6. Dibrugarh	4	8065**	30	1702	35	1724
7. Lakhimpur	3	649	27	2131**	20	793
8. Cachar	6	3052	29	672	35	488
9. Mikir Hills and N. C. Hills.	21	274	52	1265
Pooled ...	8	19617**	60	6891**	279	1565**	345	888

*Significant at 5 per cent level.

**Significant at 1 per cent level.

TABLE 7.3(A)

Analysis of Variance—June 1972-73

(Green yield)

District	Between districts		Between subdivisions		Between villages		Between fields	
	D.F.	M.S. [kg/plot.] ²	D.F.	M. S. [kg/plot.] ²	D. F.	M. S. [kg/plot.] ²	D.F.	M.S. [kg/plot.] ²
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Goalpara	2	5271**	39	998**	42	264
2. Kamrup	2	7100**	39	1182**	42	260
3. Darrang	1	5486	21	1962**	22	377
4. Nowgong	41	866**	42	257
Pooled ...	3	4669	5	6046**	140	1155**	148	278

*Significant at 5 per cent level.

**Significant at 1 per cent level.

TABLE 7.3(B)

Analysis of Variance—June 1972-73

(Percentage ratio of dry to green yield)

District	Between districts		Between Subdivisions		Between villages		Between fields	
	D. F.	M. S.	D. F.	M. S.	D.F.	M. S.	D.F.	M.S.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Goalpara	2	16.3113**	19	1.1063**	22	0.2209
2. Kamrup	2	6.2522	18	1.7105	21	0.73343
3. Darrang	1	11.6450**	8	0.8038	10	0.2620
4. Nowgong	20	0.5090*	21	0.1919
Pooled ...	3	7.0943	5	8.9544**	65	1.0509**	74	0.3639

*Significant at 5 per cent level.

**Significant at 1 per cent level.

TABLE 7.4

Analysis of Variance—Rape and Mustard 1972-73

District	Between districts		Between circles		Between villages		Between fields	
	D. F.	M. S. in 00 [kg/hect.] ²	D. F.	M. S. in 00 [kg/hect.] ²	D. F.	M. S. in 00 [kg/hect.] ²	D. F.	M. S. in 00 [kg/hect.] ²
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Goalpara	11	1051*	18	421	30	233
2. Kamrup	12	1137**	24	119**	35	46
3. Darrang	5	2535	24	1230**	30	118
4. Nowgong	7	1689**	19	300**	27	109
5. Sibsagar	5	3982	13	2227**	19	71
5. Dibrugarh	4	343	10	642	15	323
7. Lakhimpur	3	7703**	13	624	17	360
8. Cachar	3	427	5	369	7	138
9. Mikir Hills and N. C. Hills.	9	3220**	10	101
Pooled	8	15033**	50	1908**	135	888**	190	155

*Significant at 5 per cent level.

**Significant at 1 per cent level.

TABLE 7.5

Analysis of Variance—Sugarcane 1972-73

District	Between districts		Between Subdivisions		Between villages		Between fields	
	D. F.	M. S. in 0000 [kg/hect.] ²	D. F.	M. S. in 0000 [kg/hect.] ²	D. F.	M. S. in 0000 [kg/hect.] ²	D. F.	M. S. in 0000 [kg/hect.] ²
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Goalpara	2	585957*	12	110965**	15	7794
2. Kamrup	2	179670**	17	22926**	20	17484
3. Darrang	1	140550**	10	290557**	12	1987
4. Nowgong	15	111398**	16	14551
5. Sibsagar	2	156386**	28	14319**	31	2389
6. Dibrugarh	11	23048	15	15830
7. Lakhimpur	1	60916	6	68863**	8	1955
8. Cachar	2	36022*	15	9226*	18	3828
9. Mikir Hills and N. C. Hills.	9	13812*	10	2848
Pooled	8	140820	10	211754**	126	61090**	145	5750

*Significant at 5 per cent level..

**Significant at 1 per cent level.

TABLE 7.6

Analysis of Variance—Potato 1972-73

District	Between districts		Between circles		Between villages		Between fields	
	D.F.	M.S. in '00 [kg/hect.] ²	D.F.	M.S. in '00 [kg/hect.] ²	D.F.	M.S. in '00 [kg/hect.] ²	D.F.	M.S. in '00 [kg/hect.] ²
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
1. Goalpara	14	170932**	28	45284**	43	29119
2. Kamrup	12	930047	31	913954**	44	26017
3. Darrang	5	191845*	26	58122**	32	8841
4. Nowgong	5	150979	10	52537**	16	11496
5. Sibsagar	7	271331**	9	37880**	17	6301
6. Dibrugarh	4	67798	13	167842**	18	25887
7. Lakhimpur	4	152990	17	75787**	22	6552
8. Cachar	5	80389	15	30208	21	44944
Pooled	7	196100	56	329503	149	240948**	213	23309

* Significant at 5% level.

** Significant at 1% level.

TABLE 7.7

Analysis of Variance—Maikalai 1972-73

District	Between districts		Between sub-divisions		Between villages		Between fields.	
	D.F.	M.S. in '00 [kg/hect.] ²	D.F.	M.S. in '00 [kg/hect.] ²	D.F.	M.S. in '00 [kg/hect.] ²	D.F.	M.S. in '00 [kg/hect.] ²
1. Goalpara	2	30791**	30	534**	33	165
2. Kamrup	2	107	39	874*	41	441
3. Darrang	1	26358**	24	499**	26	138
4. Nowgong	23	3438**	24	342
5. Sibsagar	2	6255	17	1926**	20	472
Pooled	4	8632	7	14381*	133	1307**	144	311

* Significant at 5% level.

** Significant at 1% level.

Table 8.1

Number of villages required for estimating the average yield with different sampling errors—Autumn Rice 1972-73

Percentage sampling error	1	2	3	4	5	10
No. of fields per Village						
1	2654	664	295	166	106	27
2	1992	498	221	125	80	20
3	1771	441	197	111	71	18
4	1661	415	185	104	66	17
5	1595	399	177	100	64	16

Table 8.2

Number of villages required for estimating the average yield with different sampling errors—Winter Rice 1972-73

Percentage sampling error	1	2	3	4	5	10
No. of fields per village						
1	920	230	102	58	37	9
2	587	147	65	37	23	6
3	476	119	53	30	19	5
4	421	105	47	26	17	4
5	388	97	43	24	16	4

Table 8.3(A)

Number of villages required for estimating the average yield with different sampling errors—Jute (Plot yield of green harvest) 1972-73

Percentage sampling error	1	2	3	4	5	10
No. of fields per village						
1	1463	366	163	91	59	15
2	1180	295	131	74	47	12
3	1086	272	121	68	43	11
4	1039	260	115	65	42	10
5	1010	253	112	63	40	10

Table 8.3 (B)

Number of villages required for estimating the average yield with different sampling errors—Jute (P.c. ratio of dry and green weight) 1972-73

Percentage sampling error.	1	2	3	4	5	10
No. of fields per Village						
1	299	75	33	19	12	3
2	223	56	25	14	9	2
3	197	49	22	12	8	2
4	185	46	21	12	7	2
5	177	44	20	11	7	2

Table 8.3(C)

Number of villages required for estimating the average yield with different sampling errors—Jute (expected percentage sampling error of dry fibres) 1972-73

Number of villages taken for harvesting experiments.	Number of villages taken for drilage experiments.					
	200	175	100	75	50	25
200	2.3	2.7	2.9	3.0	3.2	3.9
150	...	3.1	3.2	3.3	3.5	4.1
100	3.7	3.8	4.0	4.6
75	4.3	4.5	5.0
50	5.3	5.7

Table 8.4

Number of villages required for estimating the average yield with different sampling errors—
Rape and Mustard 1972-73

PERCENTAGE SAM- PLING ERROR	1	2	3	4	5	10
No. of fields per village						
1	3075	769	342	192	123	31
2	2622	655	291	164	105	26
3	2468	617	274	154	99	25
4	2392	598	266	150	96	24
5	2345	585	261	147	94	23

Table 8.5

Number of villages required for estimating the average yield with different sampling errors—
Sugarcane 1972-73

PERCENTAGE SAM- PLING ERROR	1	2	3	4	5	10
No. of fields per village						
1	2286	572	254	143	91	23
2	2089	522	232	131	84	21
3	2024	506	225	127	81	20
4	1991	498	221	124	80	20
5	1971	493	219	123	79	20

Table 8.6

Number of villages required for estimating the average yield with different sampling errors—
Potato, 1972-73

PERCENTAGE SAM- PLING ERROR	1	2	3	4	5	10
No. of fields per village						
1	5759	1440	640	360	230	58
2	5251	1313	583	328	210	53
3	5081	1270	565	318	203	51
4	4997	1249	555	312	200	50
5	4946	1237	550	309	198	50

TABLE 8.7

Number of villages required for estimating the average yield with different sampling errors -Matikalai 1972-73

PERCENTAGE SAM- PLING ERROR		1		2		3		4		5		10
No. of fields Per village												
1	...	3519	...	880	...	391	...	220	...	141	...	35
2	...	2951	...	738	...	328	...	184	...	118	...	30
3	...	2760	...	690	...	307	...	173	...	110	...	28
4	...	2664	...	666	...	296	...	167	...	107	...	27
5	...	2606	...	652	...	290	...	163	...	104	...	26

TABLE 9.1.

Estimates of average yield based on the results of the experiments supervised at harvest stage and their comparison with the general results--Autumn Rice-1972-73.

Districts	For pre-assigned sample			For all Experiments Supervised at harvest				General Results		
	No. of experi- ments Supervised		Average yield (Kg/ha)	No. of experi- ments Supervised		Average yield (Kg/ha)	No. of experi- ments collected		Average yield (Kg/ha)	
1	2		3		4		5		6	7
1. Goalpara	16	...	650	...	26	...	659	...	80	710
2. Kamrup	23	...	777	...	24	...	757	...	102	623
3. Darrang	9	...	745	...	13	...	608	...	66	896
4. Nowgong	13	...	490	...	13	...	490	...	55	525
5. Sibsagar	12	...	1234	...	16	...	1112	...	46	814
6. Dibrugarh										
7. Lakhimpur	20*	...	743*	...	22*	...	711*	...	61*	680*
8. Cachar	11	...	1503	...	11	...	1503	...	53	1500
9. Mikir Hills and N.C. Hills	4	...	885	...	6	...	847	...	38	1049
Pooled	108	...	800	...	131	...	772	...	501	781

*Lakhimpur and Dibrugarh districts are considered as one district.

TABLE 9.2.

Estimates of average yield based on the results of the experiments Supervised at harvest stage and their comparison with the general results—Winter Rice. 1972-73

District	For pre-assigned Sample		For all experiments Supervised at harvest stage		General results.	
	No. of experiments Supervised	Average yield [Kg/hect]	No. of experiments Supervised	Average yield [Kg/hect.]	No. of experiments conducted.	Average yield [Kg/hect]
1	2	3	4	5	6	7
1. Goalpara ...	14	1043	18	1026	94	994
2. Kamrup ...	28	1214	29	1212	114	1079
3. Darrang ...	23	1222	31	1212	82	1308
4. Nowgong ...	16	1251	24	1233	72	1212
5. Sibsagar ...	16	1036	22	1116	86	1128
6. Dibrugarh ...	16	1228	16	1228	70	1225
7. Lakhimpur ...	13	1264	17	1399	61	1365
8. Cachar ...	17	923	17	923	71	929
9. Mikir Hills and N.C. Hills ...	6	1505	8	1428	44	1446
Pooled ...	149	1165	182	1174	694	1155

TABLE 9.3

Estimates of average yield based on the results of the experiments Supervised at harvest Stage and their comparison with the general results.
Jute---1972---73.

District	For Pr-assigned Sample		For all experiments supervised at harvest stage		General results	
	No. of experiments Supervised	Average yield [Kg/hect]	No. of experiments Supervised	Average yield [Kg/hect]	No. of experiments conducted	Average yield [Kg/hect]
1	2	3	4	5	6	7
1. Goalpara ...	16	1278	24	1080	84	1368
2. Kamrup ...	20	992	26	1107	84	1126
3. Darrang ...	11	1463	17	1296	46	1370
4. Nowgong ...	4	1392	9	1327	84	1501
Pooled ...	51	1278	76	1200	298	1353

TABLE 9.4.

Estimates of average yield based on the results of the experiments supervised at harvest stage and their comparison with the general results Rape and Mustard, 1972-73

District	For experiments supervised at harvest stage		General results	
	No. of experiments Supervised	Average yield [Kg/hect]	No. experiments conducted	Average yield [Kg/hect]
1	2	3	4	5
1. Goalpara	6	644	60	321
2. Kamrup	17	222	72	222
3. Darrang	13	392	60	453
4. Nowgong	6	225	54	316
5. Sibsagar	10	320	38	489
6. Dibrugarh	14	640	30	707
7. Lakhimpur	5	558	34	722
8. Cachar	10	223	16	271
9. Mikir Hills and N.C Hills ...	...	...	20	721
Pooled	81	376	384	412

TABLE 9.5.

Estimates of average yield based on the results of the experiments supervised at harvest stage and their comparison with the general results Sugarcane, 1972-73.

District	For experiments supervised at harvest stage		General results	
	No. of experiments Supervised	Average yield Kg/hect	No. of experiments Conducted	Average yield Kg/hect
1	2	3	4	5
1. Goalpara	6	17933	30	31529
2. Kamrup	7	34971	40	35096
3. Darrang	3	20133	24	38219
4. Nowgong	10	58080	32	50563
5. Sibsagar	15	36480	62	40167
6. Dibrugarh	8	38450	30	46480
7. Lakhimpur	2	30400	16	34828
8. Cachar	12	29067	36	31988
9. Mikir Hills and N.C Hills ...	...	...	20	31920
Pooled	63	30777	290	38235

TABLE 9.6

Estimates of average yield based on the results of the experiments supervised at harvest stage and their comparison with the general results--Potato, 1972-73

District	For experiments supervised at harvest stage		General results.	
	No. of experiments supervised	Average yield [Kg/hect]	No. of experiments conducted	Average yield [Kg/hect]
1	2	3	4	5
1. Goalpara	8	3222	86	5118
2. Kamrup	24	8553	88	5238
3. Darrang	7	3144	64	4660
4. Nowgong	7	4941	32	3775
5. Sibsagar	12	3891	34	4538
6. Dibrugarh	2	5536	36	5218
7. Lakhimpur	6	3879	44	4205
8. Cachar	12	4018	42	3672
Pooled	78	...	426	4790

TABLE 9.7

Estimates of average yield based on the results of the experiments supervised at harvest stage and their comparison with the general results-Matikalai, 1972-73.

District	For experiments Supervised at harvest Stage		General results.	
	No. of experiments Supervised	Average yield [kg/hect]	No. of experiments Conducted	Average yield [kg/hect.]
(1)	(2)	(3)	(4)	(5)
1. Goalpara	11	518	64	615
2. Kamrup	19	369	83	377
3. Darrang	7	282	52	627
4. Nowgong	6	792	48	588
5. Sibsagar	5	876	40	619
Pooled	48	527	287	522

TABLE 10.1

No. of experiments supervised in pre-assigned villages and others at harvest stage

District	Autumn paddy				Winter paddy				Jute			
	Pre-assigned expts supervised at harvest stage		Other experiments supervised at harvest stage	Total expts supervised at harvest stage	Pre-assigned expts.		Other expts. supervised at harvest stage	Total expts. supervised at harvest stage	Pre-assigned experiments		Other expts. supervised at harvest stage	Total experiments supervised at harvest stage
	Planned	supervised			Planned	Supervised			Planned	supervised		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1. Goalpara	22	16	10	26	22	14	4	18	22	16	8	24
2. Kamrup	24	23	1	24	28	28	1	29	22	20	6	26
3. Darrang	18	9	4	13	22	23	8	31	14	11	6	17
4. Nowgong	14	13	...	13	18	16	8	24	20	4	5	9
5. Sibsagar	12	12	4	16	22	16	6	22	...	...	...	...
6. Dibrugarh	12	10	2	12	16	16	...	16	...	...	...	...
7. Lakhimpur	10*	10*	...	10*	16	13	4	17	...	...	...	...
8. Cachar	14	11	...	11	18	17	...	17	...	...	...	...
9. Mikir Hillis & N.C.Hills	10	4	2	6	10	6	2	8	...	...	...	...
Pooled	136	108	23	131	172	149	33	182	78	51	25	76

Crop estimation survey on autumn paddy was conducted in Dibrugarh and Lakhimpur districts considering them as one district.

TABLE 10.1. contd.

District	No of experiments Supervised at harvest stage				All crops				P. C. of expts. super- vised at harvest stage of the Total No. of expts. planned
	Rape and Mustard	Sugarcane	Potato	Matikalai	Pre-assigned expts.		Other expts Supervised at harvest stage	Total expts super. vised at harvest stage	
					Planned	Supervised			
(1)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
1. Goalpara	6	6	8	11	66	46	53	99	19.6
2. Kamrup	17	7	24	19	74	71	75	146	24.7
3. Darrang	13	3	7	7	54	43	48	91	23.0
4. Nowgong	6	10	7	16	52	33	52	85	22.4
5. Sibsagar	10	15	12	5	34	28	52	80	26.1
6. Dibrugarh	14	8	2	...	28	26	26	52	26.5
7. Lakhimpur	5	2	6	...	26	23	17	40	19.2
8. Cachar	10	12	12	...	32	28	34	62	27.4
9. Mikir & N.C. Hills	...	...	...	...	20	10	4	14	11.5
Total	81	63	78	58	386	308	361	669	22.8

TABLE 10.2

No. of Experiments Supervised at different stages

District	Autumn paddy					Winter paddy					Jute					Rape and Mustard					
	Stage of supervision		Total		Total exclusive	Stage of Supervision		Total			Stage of Supervision		Total			Stage of supervision		Total			Total exclusive
	Pre-H	H	P.	H.		Pre-H	H	P.	H.	Pre-H	H	P.	H.	Pre-H	H	P.	H.				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	
1. Goalpara	4	26	4	34	30	4	18	...	22	20	...	24	10	34	32	2	6	6	14	12	
2. Kamrup	4	24	...	28	26	...	29	8	37	29	...	26	6	32	28	...	17	7	24	17	
3. Darrang	2	13	...	15	15	12	31	...	43	32	2	17	...	19	17	...	13	...	13	13	
4. Nowgong	...	13	...	13	13	15	24	2	41	26	...	9	...	9	9	6	6	8	20	12	
5. Sibsagar	1	16	...	17	16	...	22	...	22	22	...	...	...	...	...	4	10	2	16	12
6. Dibrugarh	...	12	...	12	12	...	16	...	16	16	...	...	...	...	...	...	14	16	10	10
7. Lakhimpur	7*	10	...	17	13	12	17	...	29	17	...	...	...	—	...	4	5	1	30	20
8. Cachar	...	11	...	11	11	6	17	...	23	17	...	...	...	...	...	8	10	6	24	12
8. Mikir N.C. Hills	...	6	...	6	6	...	8	...	8	8	...	...	...	...	...	...	...	2	2	2
Total	18	131	4	153	142	49	182	10	241	187	2	76	16	94	86	24	81	48	153	110	

TABLE 10.2 contd.

District	Sugar Cane						Potato						Matikailai						Total	
	Stage of Supervision			Total exclusive	Stage of Supervision			Total exclusive	Stage of Supervision			Total exclusive	Stage of Supervision			Total exclusive	Pre-H.	H.	P.H.	
	Pre-H.	H	P. H.		Pre-H.	H	P. H.		Pre-H.	H.	P. H.		Pre-H.	H.	P. H.					
	(27)	(13)	(14)	(25)	(26)	(17)	(18)	(19)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)
(1)																				
1. Goalpara	2	6	...	8	8	6	8	2	16	12	...	11	10	21	17	18	99	32	149	131
2. Kamrup	...	7	2	9	7	...	24	...	24	24	...	19	8	27	23	4	146	31	181	154
3. Darrang	...	3	3	6	4	2	7	...	9	9	...	7	...	7	7	18	91	3	112	9
4. Nowgong	8	10	2	20	12	10	12	...	17	11	7	16	10	33	18	46	85	22	153	1012
5. Sibsagar	...	13	1	16	16	...	12	...	12	12	1	5	...	6	6	6	80	3	89	84
6. Dibrugarh	...	2	2	4	2	...	4	6	2	2	...	...	...	...	...	...	46	18	44	42
7. Lakhimpur	...	8	...	8	8	10	12	1	23	18	...	...	...	...	...	27	46	1	91	66
8. Cachar	8	12	2	22	12	10	12	...	...	...	...	...	...	...	...	32	6	9	103	70
9. Mikir and N.C.Hills	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14	2	16	16
Total	18	63	12	93	69	32	78	3	113	96	8	58	28	94	7	151	609	121	941	761
*Crop estimation survey on Autumn laddy was not conducted separately in Lakhimpur and Dibrugarh districts.																				

*Crop estimation survey on Autumn laddy was not conducted separately in Lakhimpur and Dibrugarh districts.

TABLE 11.1

No of experiments planned and accepted for central driage experiments, 1972-73.

District	Autumn paddy		Winter paddy		Rape and Mustard		Matikalai	
	Number of experiments planned.	Number of experiments accepted for analysis.	Number of experiments planned.	Number of experiments accepted for analysis	Number of experiments planned	Number of experiments accepted for analysis	Number of experiments planned	Number of experiments accepted for analysis
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Goalpara	22	20	22	14	18	16	20	10
2. Kamrup	24	23	28	28	20	17	26	22
3. Darrang	18	18	22	22	16	16	16	16
4. Nowgong	14	10	18	18	16	16	14	12
5. Sibsagar	12	12	22	22	12	10	10	10
6. Lakhimpur	22	16	16	13	10	9	...	..
7. Dibrugarh			16	16	8	8	..	..
8. Cachar	14	11	18	17	8	7	..	...
9. Mikir & N.C.Hills	10	10	10	10	8	8	..	..
Pooled	136	120	172	160	116	107	86	70

Crop estimation survey on Autumn paddy was conducted in Lakhimpur and Dibrugarh districts considering them as one district.

TABLE 11.2

Results of Driage Experiments, 1972-73

Crop	Number of driage expts			Driage ratio applied for estimating yield (in k.g.)	Total plot yield before driage (in k.g.)	Total plot yield after driage (in k.g.)	Remarks
	Planned	Reported	Analysed				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Autumn paddy	136	120	120	11.27%	115.560	102.538	The driage ratio for the State as a whole was used for estimating the yield.
2. Winter paddy	172	168	160	8.27%	159.045	145.886	
3. Jute							District average percentage ratio of dry to green yield was used for estimating district average yield.
(a) Goalpara	44	44	44	4.50	...	...
(b) Kamrup	44	42	42	4.77	..	..
(c) Darrang	24	20	20	4.53	..	..
(d) Nowgong	42	42	42	5.44	..	..
Total Jute	154	148	148	4.88	The driage ratio for a State as a whole was used for estimating the yield.
4. Rap and Mustard	116	107	107	8.37%	69.544	63.725	
5. Sugarcane	40	36	36	10.28%	3473.000	357.324	
7. Matikalai	86	80	70	5.65%	47.619	44.929	

TABLE 12.1

Details of non-response, 1972-73

Number of experiments lost																	
Crop	No. of experiments		Experiment not conducted due to										Experiments rejected due to				
	Planned	Finally accepted for analysis	Primary workers absence, leave transfer etc.	Due to other assignments	Due to other reasons	Prior harvest by cultivator	Non-availability of crops	Other reasons	Sub total	Incomplete data	Unreliable data	Discrepant data	Late receipt of returns	(Other reasons)	Sub total	Expts for which reasons are not known	Total (10+16+17)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1. Autumn paddy	510	501	...	...	2	3	...	4	9	...	...	...	...	...	...	...	9
2. Winter paddy	700	694	4	...	...	1	...	1	6	...	...	...	...	...	...	...	6
3. Jute	300	298	...	...	...	...	...	2	2	...	...	...	...	...	...	...	2
4. Rape and Mustard	390	384	...	...	...	4	1	1	6	...	...	...	...	...	...	...	6
5. Sugarcane	300	290	...	...	...	2	4	4	10	...	...	...	...	...	...	...	10
6. Winter potato	430	426	...	...	...	2	...	...	2	...	...	...	...	2	2	...	4
Matikalai	300	287	...	...	4	1	4	4	13	...	...	...	...	...	...	...	13
Total	2930	2880	4	...	6	13	9	16	48	...	...	...	...	2	2	...	50

TABLE 13.1
Details of work load of primary staff, 1972-73

District/Subdivision	Agency for primary field work	Total Strength	Total No. of expts. assigned			No. of primary workers in								
			Kharif season	Rabi season	Both total	Kharif season with		Rabi season with	Both the seasons (total) with					
						4 expts or less	5 to 8 expts.	More than 8 expts.	4 expts. or less	5 to 8 expts	More than 8 expts.	8 expts. or less	9 to 16 expts.	More than 16 expts.
Goalpara	S	2	72	70	142	...	...	2	...	...	2	...	...	2
Dhubri	T	3	102	90	192	...	...	3	...	...	3	...	...	3
Kokrajhar	A	2	84	86	170	...	...	2	...	...	2	...	...	2
Goalpara	...	7	258	246	504	...	...	7	...	...	7	...	...	7
Borpeta	T	3	112	96	208	...	...	3	...	...	3	...	...	3
Nalbari	...	3	106	96	202	...	...	3	...	...	3	...	...	3
Gauhati	...	3	82	100	182	...	...	3	...	...	3	...	...	3
Kamrup	I	9	300	292	592	...	...	9	...	...	9	...	...	9
Mangaldoi	S	4	94	106	200	...	...	4	...	...	4	...	...	4
Tezpur	...	3	102	94	196	...	...	3	...	...	3	...	...	3
Darrang	T	7	196	200	396	...	...	7	...	...	7	...	...	7
Nowgong	I	5	212	168	380	...	...	5	...	...	5	...	...	5
Sibsaga	C	6	132	174	306	...	...	6	...	...	6	...	...	6
Dibrugar	A	3	100	96	196	...	...	3	...	...	3	...	...	3
Fakimbur	...	4	102	106	208	...	...	4	...	...	4	...	...	4
Garbar	L	4	128	98	226	...	...	4	...	...	4	...	...	4
Mikir & N C, Hills	...	4	82	40	122	...	...	4	...	2	2	...	...	2
Total		49	1,510	1,420	2,930			49		2	47			

TABLE 14.1
Details of equipment supplied to field staff 1972-73

District/ Subdivision	Primary Workers		No. of items supplied to field staff.							Remarks
	Designation	No.	Tape	String	Beam balance	Standard weight	Spring balance	Bags for driage	Kit box or kit bag	
1	2	3	4	5	6	7	8	9	10	11
Goalpara	Field Assistant	2	2	Supplied	2	2 Sets	2	As per requirement	2	
Dhubri	„	3	3	„	3	3 „	3	„	3	
Kokrajhar	„	2	2	„	2	2 „	2	„	„	
Goalpara	„	7	7	„	7	7 „	7	„	5	
Barpeta	„	3	3	„	3	3 „	3	„	2	One kit box was short in stock.
Nalbari	„	3	3	„	3	3 „	3	„	3	
Gauhati	„	3	3	„	3	3 „	3	„	3	One P. I was engaged as one post of F. A was vacant.
Kamrup	„	9	9	„	9	9 „	9	„	8	
Tezpur	„	3	3	„	3	3 „	3	„	3	
Mangaldoi	„	4	4	„	4	4 „	4	„	4	One P. I was engaged as one post of F. A was vacant.
Darrang	„	7	7	„	7	7 „	7	„	7	
Nowgong	„	5	5	„	5	5 „	5	„	„	
Sibsagar	„	6	6	„	6	6 „	6	„	6	
Dibrugarh	„	3	3	„	3	3 „	3	„	3	
Lakhimpur	„	4	4	Nil	4	4 „	4	„	Nil	
Cachar	„	4	4	Supplied	4	4 „	4	„	4	
Mikir and N. C. Hills	„	4	4	„	4	4 „	4	„	Nil	
Total—	„	49	49	„	49	49 „	49	„	33	

TABLE 15.1
Details of Participants in the training given to the field staff engaged in crop estimation surveys 1972-73

Centre	District	Subdivision	No. of officers deputed from H. Qs.	State officer participated			N. S. S. Participants				Remarks
				Designation	Supervisory and Primary Staff		As training officer	As observer			
					Total strength called	No. attended		Design- nation	No. attended		
...	...	Goalpara	...	Statistical officer	1	1	1	...	...	...	The S. I. S. could not attend due to other engagement and the P. A. was on leave.
			...	Sub-Inspector of Statistics	1	1	...	...	...	...
			...	Field Assistant	2	2	1	...	...	...
...	Goalpara	Dhubri	...	Statistical officer	1	1	1	...	...	...	One post of I. S. was vacant and one P. A was on leave.
			...	Inspector of Statistics	2	1	1	...	...	...
			...	Sub-Inspector of Statistics	1	...	...	...	...	...
			...	Field Assistant	3	2	2	...	...	...
Gauhati	...	Kokrajhar	1 (One)	Statistical officer	1	1	1	Suptd.	1 Asstt. Director	1	Post of I.S. was vacant.
			...	Inspector of Statistics	1	...	...	...	Asstt. Suptd.	1	
			...	Sub-Inspector of Statistics	1	1	1	...	...	...
			...	Field Assistant	2	2	2	...	...	...
...	Kamrup	Borpeta	...	Statistical officer	1	1	...	...	...	...	The S. O. could not attend due to other engagements.
			...	Inspector of Statistics	1	1	1	...	...	...
			...	Field Assistant	3	3	3	...	...	...
...	Netaji	Nalbari	...	Statistical officer	1	1	1	...	...	...
			...	Sub-Inspector of Statistics	1	1	1	...	...	...
			...	Field Asstt.	3	3	3	...	...	...

TABLE 15-1 contd.

Remarks

Centre	District	Subdivision	No. of officers deputed from H.Qs.	State officers participated			N. S. S. Participants			
				Supervisory and Primary Staff		Designation	As training officer		As observer	
				Total strength	No. called		Designation	No. attended	Designation	No. attended
Gaubhati	Kamrup	Gaubhati	1	1	1	Statistical officer	...	...	...	...
				1	1	Inspector of Statistics	...	...	...	...
				2	2	Sub-Inspector of Statistics, Field Assistant	...	...	...	...
Tezpur	Darrang	Mangaldoi	...	3	2	Field Assistant	...	...	...	...
				1	1	Statistical officer	...	...	...	...
				4	3	Inspector of Statistics, Field Assistant	...	...	...	...
Tezpur	Darrang	Tezpur	...	1	1	Statistical officer	...	...	...	...
				1	1	Inspector of Statistics	...	...	...	...
				3	2	Sub-Inspector of Statistics, Field Assistant	...	...	...	...
Nowgong	Nowgong	...	...	1	1	Inspector of Statistics, i/c, Statistical officer	...	...	...	...
				1	1	Sub-Inspector of Statistics, Field Assistant	...	...	...	...
				6	5	Field Assistant	...	...	...	...
Jorhat	Sibsagar	...	...	1	1	Statistical officer	...	...	...	...
				2	2	Inspector of Statistics	...	...	...	...
				1	1	Sub-Inspector of Statistics, Field Assistant	...	...	...	...
Dibrugarh	Dibrugarh	...	...	6	6	Field Assistant	...	...	...	...
				1	1	Statistical Officer	...	...	...	...
				1	1	Inspector of Statistics	...	...	...	...
North Lakhimpur.	Lakhimpur	...	...	1	1	Sub-Inspector of Statistics, Field Assistant	...	...	...	...
				1	1	Inspector of Statistics	...	...	...	...
				2	2	Field Assistant	...	...	...	...
Silchar	Cachar	...	...	1	1	Statistical Officer	...	...	...	...
				2	2	Inspector of Statistics	...	...	...	...
				2	2	Sub-Inspector of Statistics	...	...	...	...
Diphu	Mikir and N.C. Hills.	...	...	4	2	Field Assistant	...	...	...	...
				1	1	Statistical Officer	...	...	...	...
				4	4	Field Assistant	...	...	...	...

One post of F. A. was vacant.

One F. A. was on leave.

One post of F. A. was vacant

One post of F. A. was vacant

In the rabi seasons two more F. As. were sent on tour who were given training separately.

Two F. As. were on leave.

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